

WHAT IS CLAIMED IS:

- 1           1.     In a computer system, a method of remotely  
2     monitoring execution of a computer program, comprising the  
3     steps of:  
4                 modifying the computer program to include at least  
5     one monitoring instruction;  
6                 executing the computer program;  
7                 the at least one monitoring instruction collecting  
8     data regarding the execution of the computer program; and  
9                 sending the collected data to a remote system.
- 1           2.     The method of claim 1, further comprising the  
2     step of automatically sending the collected data to the remote  
3     system when the computer program finishes execution.
- 1           3.     The method of claim 1, further comprising the  
2     step of changing the at least one monitoring instruction over  
3     the computer program development cycle.
- 1           4.     The method of claim 1, further comprising the  
2     step of classifying the execution of the computer program as  
3     normal or abnormal.
- 1           5.     The method of claim 4, further comprising the  
2     step of saving the call stack in the collected data if the  
3     execution of the computer program is classified as abnormal.
- 1           6.     The method of claim 1, further comprising the  
2     step of allowing a user to customize processing that will be  
3     performed when the computer program finishes execution.
- 1           7.     The method of claim 1, further comprising the  
2     step of generating a symbolic call stack on the remote system  
3     (server) so that the computer program may be debugged remotely.
- 1           8.     The method of claim 1, wherein the computer  
2     program is compiled on the remote system (server) and further

3 comprising the step of storing a module map when the computer  
4 program is compiled on the remote system.

1 9. The method of claim 8, further comprising the  
2 step of storing a call stack and module list when the computer  
3 program finishes execution.

1 10. The method of claim 9, further comprising the  
2 step of generating a module name/RVA list from the call stack  
3 and the module list.

1 11. The method of claim 10, further comprising the  
2 step of sending the module name/RVA list to the remote system.

1 12. The method of claim 11, further comprising the  
2 step of generating a symbolic call stack on the remote system  
3 from the module map and the module name/RVA list so that the  
4 computer program may be debugged remotely.

1 13. The method of claim 1, further comprising the  
2 step of remotely debugging the computer program.

1 14. The method of claim 1, further comprising the  
2 step of sending a version of the computer program to the remote  
3 system during execution of the computer program.

1 15. The method of claim 14, further comprising the  
2 step of downloading a new version of the computer program from  
3 the remote system.

1 16. The method of claim 1, further comprising the  
2 step of sending information to a bug tracking application.

1 17. The method of claim 1, further comprising the  
2 step of, for each portion of the computer program designed by a  
3 different vendor, collecting data specific to each portion.

1           18. The method of claim 1, wherein the at least one  
2 monitoring instruction specifies a vendor.

1           19. The method of claim 1, further comprising the  
2 step of adding the at least one monitoring instruction to  
3 source code of the computer program.

1           20. The method of claim 19, further comprising the  
2 step of utilizing a Windows hook to intercept a system call  
3 invoked by the computer program.

1           21. The method of claim 1, further comprising the  
2 step of augmenting object code of the computer program to  
3 include the at least one monitoring instruction.

1           22. The method of claim 1, wherein the at least one  
2 monitoring instructions are computer platform independent.

1           23. A distributed computer system, comprising:  
2 a server computer;  
3 a client computer in communication with the server  
4 computer; and  
5 a computer program running on the client computer  
6 that includes at least one monitoring instruction that collects  
7 and sends data regarding execution of the computer program to  
8 the server computer.

1           24. The distributed computer system of claim 23,  
2 further comprising a transport medium connecting the client  
3 computer and the server computer.

1           25. The distributed computer system of claim 24,  
2 wherein the transport medium is a network or media.

1           26. The distributed computer system of claim 23,  
2 further comprising a DLL for intercepting system calls.

1           27. The distributed computer system of claim 23,  
2 further comprising a bug tracking application.

1           28. The distributed computer system of claim 23,  
2 further comprising an expansion mechanism for augmenting the  
3 computer program to include the at least one monitoring  
4 instruction.

1           29. A computer program product for remotely  
2 monitoring execution of a computer program, comprising:  
3           a computer readable storage medium storing the  
4 computer program comprising:  
5           code that calls at least one monitoring instruction,  
6 the at least one monitoring instruction collecting data  
7 regarding the execution of the computer program;  
8           and code that sends the collected data to a remote  
9 system.

1           30. The computer program product of claim 29,  
2 further comprising code that automatically sends the collected  
3 data to the remote system when the computer program finishes  
4 execution.

1           31. The computer program product of claim 29,  
2 further comprising code that classifies the execution of the  
3 computer program as normal or abnormal.

1           32. The computer program product of claim 29,  
2 further comprising code that saves the call stack in the  
3 collected data if the execution of the computer program is  
4 classified as abnormal.

1           33. The computer program product of claim 29,  
2 further comprising code that allows a user to customize  
3 processing that will be performed when the computer program  
4 finishes execution.

1           34. The computer program product of claim 29,  
2 further comprising code that stores a call stack and module  
3 list when the computer program finishes execution.

1           35. The computer program product of claim 34,  
2 further comprising code that generates a module name/RVA list  
3 from the call stack and the module list.

1           36. The computer program product of claim 35,  
2 further comprising code that sends the module name/RVA list to  
3 the remote system.

1           37. The computer program product of claim 29,  
2 further comprising code that downloads a version of the  
3 computer program from the remote system.

1           38. The computer program product of claim 29,  
2 further comprising code that sends information to a bug  
3 tracking application.

1           39. The computer program product of claim 29,  
2 wherein the at least one monitoring instruction specifies a  
3 vendor.